Log Event A

Borehole # 30-03-07

Borehole Information

Farm : C	**Tank :** C-103	**Site Number :** 299-E27-77
N-Coord : 42,820	**W-Coord :** 48,212	**TOC Elevation :** 645.64
Water Level, ft :	**Date Drilled :** 9/30/1974	

Casing Record

Type : Steel-welded	Thickness : 0.280	ID, in. : 6
Top Depth, ft. : 0	Bottom Depth, ft. : 100	

Borehole Notes:
This borehole was drilled in September 1974 to a depth of 100 ft with 6-in. casing. The casing thickness is presumed to be 0.280 in., on the basis of the published thickness for schedule-40, 6-in. steel tubing. No information concerning grouting or perforations was available; therefore, it is assumed that the borehole was not grouted or perforated. The top of the casing, which is the zero reference for the SGLS, is even with the ground surface.

Equipment Information

Logging System : 1	**Detector Type :** HPGe	**Detector Efficiency:** 35.0 %
Calibration Date : 10/1996	**Calibration Reference :** GJO-HAN-13	**Logging Procedure :** P-GJPO-1783

Log Run Information

Log Run Number : 1	**Log Run Date :** 04/11/1997	**Logging Engineer:** Alan Pearson
Start Depth, ft.: 96.5	**Counting Time, sec.:** 100	**L/R :** L **Shield :** N
Finish Depth, ft. : 23.0	**MSA Interval, ft. :** 0.5	**Log Speed, ft/min.:** n/a

Log Run Number : 2	**Log Run Date :** 04/14/1997	**Logging Engineer:** Alan Pearson
Start Depth, ft.: 0.0	**Counting Time, sec.:** 100	**L/R :** L **Shield :** N
Finish Depth, ft. : 24.0	**MSA Interval, ft. :** 0.5	**Log Speed, ft/min.:** n/a

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Analysis Information

Analyst : D.L. Parker

Data Processing Reference : P-GJPO-1787 Analysis Date : 05/06/1997

Analysis Notes :

This borehole was logged by the SGLS in two log runs. The pre- and post-survey field verification spectra met the acceptance criteria established for the peak shape and detector efficiency, confirming that the SGLS was operating within specifications. The energy calibration and peak-shape calibration from these spectra were used to establish the peak resolution and channel-to-energy parameters used in processing the spectra acquired during the logging operation. There was some gain drift and it was necessary to adjust the established channel-to-energy parameters during processing of log data to maintain proper peak identification.

Casing correction factors for a 0.280-in.-thick steel casing were applied during analysis.

The only man-made radionuclide detected in this borehole was Cs-137. The presence of Cs-137 was measured continuously from the ground surface to 40 ft, almost continuously from 42.5 to 62.5 ft, and intermittently from 93 ft to the bottom of the borehole.

The KUT concentrations increase at 40 ft. A distinctive peak is shown on the K-40 concentration plot at 42 ft.

The KUT concentrations increase below a depth of about 54 ft. The K-40 concentrations increase again from 80.5 ft to the bottom of the logged interval.

Additional information and interpretations of log data are included in the main body of the Tank Summary Data Reports for tanks C-102 and C-103.

Log Plot Notes:

Separate log plots show the man-made and the naturally occurring radionuclides. The natural radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate the concentrations. Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the MDL. The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.

A combination plot includes the man-made and natural radionuclides, the total gamma derived from the spectral data, and the Tank Farms gross gamma log. The gross gamma plot displays the latest available digital data. No attempt has been made to adjust the depths of the gross gamma logs to coincide with the SGLS data.

A comparison plot is also provided showing the Cs-137 and Co-60 concentrations determined from the SGLS and those determined from the Radionuclide Logging System (RLS) in 1994.

A plot of representative historical gross gamma-ray logs from 1975 to 1982 is included. The headings of the plots identify the date on which the data in the plots were gathered.